

COMPRESSOR DEFINITION

Designation	EM I40CNP
Nominal Voltage/Frequency	220 V 50-60 Hz
Engineering Number	513307313

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	220 / 50-60	[V / Hz]	
4 Application type	Low-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°F)	
5 Motor type	RSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	187 to 242 V	187 to 242 V
8.2 LBP (43°C Ambient temperature)	Static	187 to 242 V	187 to 242 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm ²] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm ²] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/8	[hp]
2 Displacement	6.36	[cm ³] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	160	[ml] (5.41 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	MINERAL / ISO32	
4 Weight (with oil charge)	6.99	[kg] (15.41 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA17C1/8EA5B1/QPS2-A22MG1	
3 Start capacitor	-	[μF(VAC minimum)]
4 Run capacitor	-	[μF(VAC minimum)]
5 Motor protection	4TM189NFBYY-53	
6 Start winding resistance	27.75	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	19.40	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	5.00/4.50	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	1.00/0.90	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification	CE - IRAM - UKCA	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V50Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
340	86	100	88	0.72	1.07	3.85	0.97	1.13

TEST CONDITIONS: @220V60Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
410	103	120	104	0.67	1.29	3.95	1.00	1.16

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	204	51	60	69	0.69	0.64	2.96	0.75	0.87
-30	(-22)	266	67	78	76	0.71	0.83	3.51	0.89	1.03
-25	(-13)	343	86	100	82	0.72	1.08	4.18	1.05	1.22
-20	(- 4)	439	111	129	89	0.74	1.38	4.94	1.25	1.45
-15	(+ 5)	559	141	164	96	0.76	1.76	5.80	1.46	1.70
-10	(+14)	705	178	207	104	0.78	2.22	6.75	1.70	1.98
-5	(+23)	881	222	258	113	0.80	2.79	7.78	1.96	2.28

TEST CONDITIONS: @220V50Hz			ASHRAE32 Static		(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	165	42	48	69	0.69	0.52	2.41	0.61	0.71
-30	(-22)	229	58	67	77	0.71	0.72	2.98	0.75	0.87
-25	(-13)	307	77	90	85	0.73	0.96	3.62	0.91	1.06
-20	(- 4)	403	101	118	93	0.75	1.26	4.34	1.09	1.27
-15	(+ 5)	519	131	152	101	0.77	1.64	5.11	1.29	1.50
-10	(+14)	662	167	194	111	0.80	2.09	5.94	1.50	1.74
-5	(+23)	832	210	244	122	0.83	2.63	6.81	1.72	1.99

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V50Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	131	33	38	68	0.70	0.41	1.92	0.48	0.56
-30	(-22)	194	49	57	77	0.71	0.61	2.52	0.63	0.74
-25	(-13)	270	68	79	85	0.73	0.85	3.16	0.80	0.93
-20	(- 4)	362	91	106	95	0.75	1.14	3.83	0.97	1.12
-15	(+ 5)	474	119	139	105	0.78	1.49	4.53	1.14	1.33
-10	(+14)	609	153	178	116	0.81	1.92	5.25	1.32	1.54
-5	(+23)	771	194	226	129	0.85	2.44	5.97	1.50	1.75

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	228	58	67	78	0.61	0.71	2.92	0.74	0.86
-30	(-22)	306	77	90	85	0.63	0.96	3.62	0.91	1.06
-25	(-13)	404	102	118	93	0.66	1.27	4.36	1.10	1.28
-20	(- 4)	526	133	154	102	0.69	1.65	5.13	1.29	1.50
-15	(+ 5)	675	170	198	113	0.73	2.13	5.95	1.50	1.74
-10	(+14)	853	215	250	125	0.77	2.69	6.81	1.72	2.00
-5	(+23)	1062	268	311	138	0.82	3.36	7.72	1.94	2.26

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature	Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	197	50	58	77	0.61	0.62	2.55	0.64	0.75
-30	(-22)	273	69	80	86	0.63	0.86	3.19	0.80	0.94
-25	(-13)	369	93	108	96	0.66	1.16	3.87	0.98	1.13
-20	(- 4)	488	123	143	107	0.70	1.53	4.59	1.16	1.35
-15	(+ 5)	632	159	185	118	0.74	1.99	5.35	1.35	1.57
-10	(+14)	804	203	236	131	0.79	2.54	6.15	1.55	1.80
-5	(+23)	1006	254	295	143	0.84	3.18	6.99	1.76	2.05

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V60Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	157	40	46	72	0.60	0.49	2.18	0.55	0.64
-30	(-22)	236	59	69	84	0.63	0.74	2.79	0.70	0.82
-25	(-13)	333	84	98	96	0.67	1.05	3.43	0.87	1.01
-20	(- 4)	453	114	133	110	0.71	1.42	4.11	1.04	1.21
-15	(+ 5)	596	150	175	123	0.76	1.88	4.83	1.22	1.42
-10	(+14)	766	193	224	137	0.81	2.42	5.59	1.41	1.64
-5	(+23)	965	243	283	151	0.87	3.05	6.39	1.61	1.87

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard EG/F/AMEM Version 2		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted parallel to Base Plate		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted parallel to Base Plate		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted parallel to Base Plate		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		